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Atty. Docket No.: 2876-Z**UTILITY PATENT APPLICATION TRANSMITTAL**
(Only for new nonprovisional applications under 37 C.F.R. §1.53(b))Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of:

INVENTOR: Jody CHRISTYFOR: PLOWED MATERIAL CATCHER FOR V-BLADE SNOWPLOW

1. ☒ Specification of 5 pages.
☒ Claims, 4 in number.
☒ Abstract.
2. ☒ Drawings. ☐ Formal ☒ Informal 2 sheets.
3. ☐ Declaration.
a. ☐ Newly executed (original or copy)
b. ☐ Copy from a prior application (37 CFR 1.63(d))
(For continuation/divisional with Box 5 completed)
[Note Box 4 below]
4. ☐ Incorporation by Reference *(useable if Box 3.b. is checked)*.
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 3.b., is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
5. ☒ If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information:
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP):
of prior application Serial No.: _____
☒ Nonprovisional application based on provisional application Serial No. 60/087,070
filed May 28, 1998.
6. ☐ Small-entity Statement
☐ Statement filed in prior application,
Status still proper and desired
7. ☐ An assignment of the invention to: _____
8. ☐ A certified copy of _____ application No. _____ filed _____, the priority of which is hereby claimed.
9. ☐ Preliminary Amendment
10. ☒ The Declaration and Power of Attorney will be filed subsequently under Rule 1.53(d)
11. ☐ Information Disclosure Statement (IDS) PTO-1449
☐ Copies of IDS Citations.
12. ☐ Other:

13. ☒ Not enclosed. The filing fee has been calculated as shown below:

| For | No. Filed | Basic | No. Extra | Rate \$ | Calculations |
|--|-----------|-------|-----------|----------|--------------|
| Total Claims | 4 | 20 | 0 | \$ 18.00 | \$.00 |
| Indep. Claims | 1 | 3 | 0 | \$ 78.00 | \$.00 |
| <input type="checkbox"/> Multiple Dependent Claims | | | | \$260.00 | \$ |
| BASIC FEE | | | | | \$760.00 |
| TOTAL OF ABOVE CALCULATIONS | | | | | \$760.00 |
| <input type="checkbox"/> Reduction by 1/2 For Filing By Small Entity | | | | | \$ |
| TOTAL FILING FEE | | | | | \$760.00 |

14. ☒ It is requested that the attached application be given a serial number and filing date and that correspondence concerning this application be forwarded to applicants' undersigned counsel.

Respectfully submitted,



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Date: May 27, 1999

PLOWED MATERIAL CATCHER FOR V-BLADE SNOWPLOW

REFERENCE TO RELATED APPLICATION

This invention is the subject of provisional application Serial No. 60/087,070 filed May 28, 1998 and entitled SNOW CATCHER.

BACKGROUND AND BRIEF DESCRIPTION OF THE INVENTION

The present invention provides a plowed material catcher attachment system for an adjustable V-bladed snowplow or other V-bladed plow.

The prior art uses flat rubber belting bolted to the cutting edges of the blades to prevent a small track of plowed material from passing the blades.

The object of the invention is to provide an adjustable V-bladed plow with a device to prevent the small trail of material which passes through the small opening between two blades in any blade position.

A plowed material (e.g. snow) catcher member is fixedly mounted below the center or vertical pivot assembly for the adjustable blades. It includes an arcuate ramp portion projecting forwardly of the central pivot assembly and directs plowed material to the blades, respectively.

Reference is made to Capra et al, U.S. Patent No. 5,568,694 (incorporated herein by reference) for a full exposition of the plow and its functioning operation.

DESCRIPTION OF THE DRAWINGS

The above and other objects, advantage and features of the invention will become more clear when considered with the following specification and accompanying drawings wherein;

Figure 1 is an exploded view of a snow plow system incorporating the invention,

Figure 2 is an enlarged isometric view of the snow catcher of this invention,

Figure 3 is an enlarged view of the snow catcher per se, and

Figure 4 is a sectional view of the snow catcher.

DETAILED DESCRIPTION OF THE INVENTION

Referring to Figure 1, the following list sets out the component part number and description of the component part:

| Component Part | Description |
|----------------|--|
| 1 | Blade Half Right |
| 2 | Blade Half Left |
| 3 | Center Section, RT3 V-Blade (all models) |
| 4 | T-Frame, RT3 V-Blade (all models) |
| 5 | Cutting Edge, 7'6" V-Blade 5/8" Holes |
| 5 | Cutting Edge, 8'2" V-Blade 5/8" Holes |
| 5 | Cutting Edge, 9'2" V-Blade 5/8" Holes |
| 6 | Carriage Bolt Set |
| | Includes: (10) Carriage Bolts 5/8"-11 x 2" Grade #5 ZN |
| | (10) 5/8" Hardened Washers |
| | (10) 5/8" Lock Nuts |
| 7 | Bumper Stop, w/Mounting Hardware |
| 7 | A Self-Tapping Bolt, 3/8" - 16 x 2" Hex Washer Head ZN |
| 9 | Spring Yoke, RT3 V-Blade |
| 10-44-45 | Plow Shoe Assembly |
| | Includes: (1) Plow Shoe (1" Shaft) |
| | (1) 7/16" Quick Pin |
| | (20) 1" Flat Washers |

66250" 30 35 40 45 50 55

| | | | |
|----|----------|---|--|
| | 10-44-45 | | Plow Shoe, Cast Iron (Center Shoe) Includes: (1) Plow Shoe (1" Shaft), Cast Iron (1) 7/16" Quick Pin (20) 1" Flat Washers |
| 5 | 11 | | Snow Catcher w/Mounting Hardware |
| | 12 | | Horizontal Hinge Pin Kit, RT3 V-Blade (all models) |
| | 13 | | Center Hinge Pin, RT3 V-Blade (all models) |
| | 14 | | Hydraulic Pump - Power Unit Barnes |
| | 14 | A | Hydraulic Pump Filler Cap |
| 10 | 14 | B | Hydraulic Pump Motor - Barnes |
| | 14 | C | Hydraulic Pump Solenoid |
| | 14 | D | Hydraulic Pump Solenoid Ground Cable |
| | 14 | E | Battery cable, 66" |
| | 14 | H | Ground/Power Cable 60" (Vehicle Side) |
| 15 | 14 | J | Ground/Power Cable 36" (Plow Side) |
| | 14 | K | Ground/Power Cable Dust Cap/Plug |
| | 14 | L | Hydraulic Reservoir Drain plug |
| | 15 | | Hydraulic Valve Assembly with SmartHitch |
| 20 | 15 | A | Hydraulic Lift/Angle Valve |
| | 15 | B | Hydraulic Valve Coil |
| | 15 | C | Hydraulic Relief Valve |
| | 15 | D | Hydraulic Check Valve |
| | 15 | E | Hydraulic Valve Screen Cartridge |
| | 15 | F | Hydraulic Valve Ground Strap |
| 25 | 15 | G | Hydraulic Valve, SmartHitch Attach |
| | 15 | H | Hydraulic Valve, Flow Control Cartridge |
| | 16 | | SmartHitch Toggle Switch Kit (Includes Switch and Jumpers) |
| | 17 | | Hydraulic Cylinder, Angle |
| | 18 | A | Hydraulic Hose 1/4" x 12", 1/4" MNPT x 1/4" MNPT) |
| | 18 | B | Hydraulic Hose 1/4" x 15-1/2", (1/4" MNPT x 1/4" MNPT) |
| | 18 | C | Hydraulic Hose 1/4" x 15" (1/4" ORB x 1/4" MNPT) |
| | 22 | | Hydraulic Hose 3/8" x 40" (1/4" MNPT x 3/8" MNPT) |
| | 25 | | Hydraulic Cylinder, RT3 Lift |
| | 32 | | Hydraulic Swivel Fitting, 90 Deg. (1/4" ORS x 1/4" FPS) |
| | 33 | | Trip/Return Spring |
| | 37 | | Blade Guide Set |
| | 37 | A | Blade Guide Tip |
| | 38 | | Auxiliary Headlight Set, Low Profile Plastic |
| 40 | 38 | A | Turn Signal Cover, Low Profile Plastic |
| | 38 | L | Auxiliary Headlight, Left, Low Profile Plastic |
| | 38 | R | Auxiliary Headlight, Right, Low Profile Plastic |
| | 39 | | Auxiliary Light Harness Assembly Includes: Toggle Switch Connectors |
| 45 | 39 | A | Light and Control Harness 116" (Vehicle Side) |
| | 39 | B | Light and Control Harness 48" (Plow Side) |
| | 40 | A | Switch Box Control, V-Blade |
| | 40 | B | Joystick Control, V-Blade |
| | 41 | | Rocker Switch - Lift |
| 50 | 42 | | Rocker Switch - Angle |
| | 44 | | Quick Pin - 7/16" |
| | 46 | | Hydraulic Fitting, 90 Deg. (1/8" MNPT x 1/4" FNPT) |
| | 47 | | Eye Bolt, 1/2" |
| | 55 | | Hex Head Cap Screw, 5/8" - 11 x 4-1/2" GR5 ZN |
| 55 | 60 | | Pivot Pin, Kit (Includes Cotter Pins and Washers) |
| | 60 | A | Pivot Pin |
| | 60 | B | 3/16" Cotter Pin |

| | | | |
|----|-----|---|--|
| | 61 | | Coupler Assembly |
| | 62 | | Push Beam Assembly, RT 3 |
| | 62 | A | Push Beam Support Plat RH (Passenger Side) |
| 5 | 62 | B | Push Beam Support Plate LH (Driver Side) |
| | 64 | | Coupler Spring Pin Kit |
| | | | Includes: Coupler Spring Pin |
| | | | Rolled Pin |
| | | | Coupler Spring Pin Spring |
| 10 | 64 | A | Coupler Spring Pin |
| | 64 | B | Rolled Pin (5/16" x 20-1/2") |
| | 64 | C | Coupler Spring Pin Spring |
| | 67 | | Spring, SmartHitch Torsion Spring |
| | 71 | | Washer, 3/8" Split Lock |
| 15 | 72 | | Washer, 3/8" Fender |
| | 73 | | Light Bracket Assembly |
| | 73 | A | Hydraulic Enclosure Cover |
| | 73 | B | Rubber Grommet |
| | 73 | C | Thumb Screw, 10-24 x 1/2" |
| 20 | 75 | A | Angle Bracket RH (Passenger Side) |
| | 75 | B | Angle Bracket LH (Driver Side) |
| | 80 | | Control Harness Mounting Bracket |
| | 85 | | Hairpin Cotter, #16 |
| | 86 | | Clevis Pin, 5/8" x 3-1/2" |
| 25 | 96 | | Hex Head Cap Screw, 5/8" - 11 x 5-1/2" GR5 ZN |
| | 97 | | Nut, Self-Locking 5/8" - 11 ZN |
| | 101 | | Power Ground Cable Mounting Bracket |
| | 102 | | Rubber Split Grommet, 1-1/8" |
| | 104 | | Weather Cap for Light & Control Harness (Vehicle Side) |
| | 106 | | Weather Cap for Light & Control Harness (Plow Side) |
| 30 | 108 | | Headlight Adapter Kit |

As shown in Figure 1, the blades 1 and 2 of the plow are pivotally mounted on a center section 3 having a center hinge pin 13 and the angle of the blades 1 and 2 is adjusted by hydraulic cylinders 17. The invention features a plowed material catcher 11 which is fixedly mounted on the lower end of center section 3 and hinge pin 13. Plowed material catcher 11 has a ramped surface 11R which is arcuate and generally conically shaped and, in a preferred embodiment, makes an angle of about 120°-130° to the plowed surface - 123.7° in the preferred embodiment. Plowed material catcher 11 may be molded or machined from rubber, plastic or steel. The catcher 11

has a flat upper surface 11F and mounting hole 11MH.

Raised portion 11P includes a key hole 11K for receiving a key pin (not shown) which prevents rotation of catcher 11.

5 In operation, any plowed or unplowed material which would tend to trail between the blades is blocked and directed to the plowed material catcher 11 to one blade or the other so as to not leave a trail of plowed material between the plow blades 1 and 2.

10 While the invention has been described in relation to preferred embodiments of the invention, it will be appreciated that other embodiments, adaptations and modifications of the invention will be apparent to those skilled in the art.

WHAT IS CLAIMED IS:

1. In a V-blade plow having a pair of adjustable plow blades having inner ends hinged on a central pivot assembly, the improvement comprising a plowed material catcher member mounted below said central pivot assembly to prevent a trail of plowed material from passing through any space between the inner ends of said blades at any position of blade adjustment.

2. The invention defined in claim 1 wherein said catcher member includes an arcuate ramp surface portion projecting forwardly of said central pivot assembly and directing snow to said blades respectively.

3. The invention defined in claim 2 wherein said catcher member is made from a material selected from rubber plastic or metal.

4. The invention defined in claim 2 wherein said arcuate ramp surface portion makes an angle to about 120°-130° to a surface being plowed.

ABSTRACT OF THE DISCLOSURE

A V-blade plow having a pair of adjustable plow blades having inner ends hinged on a central pivot assembly, the improvement comprising a plowed material catcher member mounted below said central pivot assembly to prevent a trail of snow from passing through any space between the inner ends of the blades at any position of blade adjustment. The plowed material catcher member includes an arcuate ramp portion projecting forwardly of said central pivot assembly and directing snow to said blades respectively. The catcher member is made from a material selected from rubber plastic or metal.

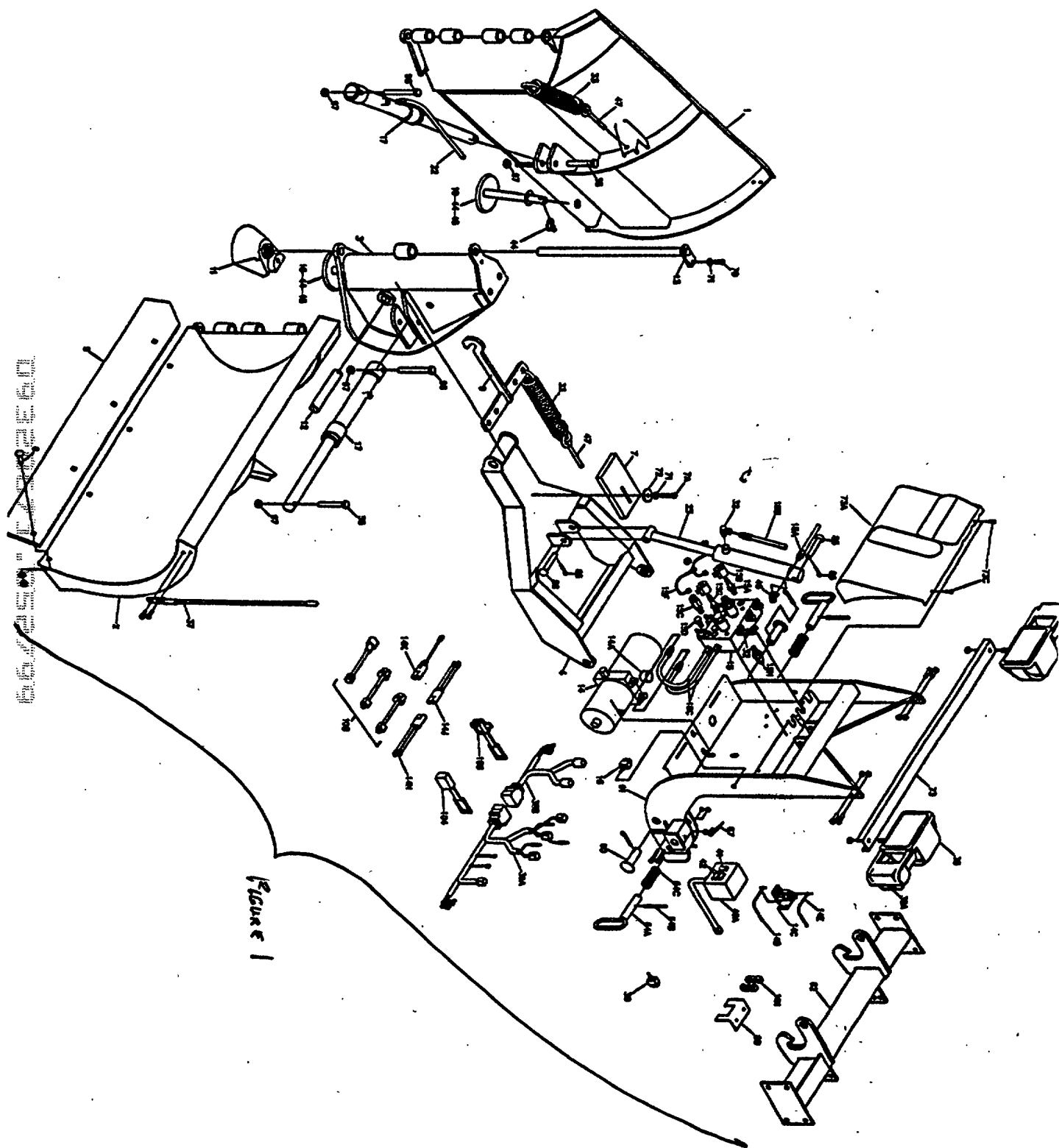


Figure 1

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